IN THE SPECIFICATION

Please amend the third full paragraph of page 6 of the Specification as originally filed as follows:

A wheel alignment measuring system for motor vehicles according to the invention is characterized by measuring units for determining the spatial position of a wheel rim to a measuring unit at the wheels of the motor vehicle in which measuring units are positioned on a measuring site in such a manner that a measuring unit ~~each~~ is associated with each one of the wheels of the motor vehicle [[ ]]whereby the relative positions of the measuring units are determined during the execution of the measurements, a computer which processes the measurement results of the measurements on the wheels of the motor vehicle to wheel position values taking into account the relative positions of the measuring units, and by an output[[-]] or display unit with outputs or displays the wheel position values.

Please amend the description of Figure 5 on page 7 of the Specification as originally filed as follows:

Fig.5 shows a schematic representation of [[a]] an intersection picture of the torus in the intersection plane Eφ ;

Please amend the last full paragraph of page 8 of the Specification as originally filed as follows:

If the true axis of rotation of the original body is not at the same time a symmetry axis of rotation of the fitted [[ ]]3-D model, one can calculate the rotary position of the original body from the position of the fitted 3-D model. Thus the normal vectors

of a<ins>n</ins> osculating plane not ~~beeing~~ being perpendicular to the axis of rotation during the rotation of the original body, describe for instance a circle-cone the center of which is the axis of rotation, as is evident from Figure 1.

Please amend the paragraph that begins line 32 of page 8 and continues to line 4 of page 9 of the Specification as originally filed as follows:

If the axis of rotation is determined once, one can then deduce the position of the axis of rotation through measurement of the marked plane even if the position of the rotating body should have changed in the meantime. In connection with the wheel alignment measurement, this basic idea leads to the question as to how one can obtain [[a]] an adequately general, localized 3-D model for the different rim geometries.

Please amend the last full paragraph of page 9 of the Specification as originally filed as follows:

As all rims in the edge range to the tire locally show a ring shaped geometry, a local ring surface is fitted here in the range of the rim edge such that the edge contours of the rim as seen by the camera and the aforesaid fitted ring surface become the same. Such a ring surface corresponds to [[a]] an osculating surface in the area of the rim horn, more precisely to the so called extreme shadow border line from the view of the camera.

Please amend the second full paragraph of page 10 of the Specification as originally filed as follows:

The extreme shadow border line of a ring surface or a rim is in general no even spatial curve, especially no circle, except if the projection center lies on the axis of rotation of the ring surface or rim. The pers-pective picture is, as a rule, no ellipse. For two aperture cameras with different projection centers the extreme shadow border lines are different (Figure 2). This means, that an interpretation of the edge contour as picture of ~~an~~ a unitary spatial curve and, therefore, a usual stereo reconstruction by means of epipolar conditions must necessarily lead to faulty reconstructions.

Please amend the first full paragraph of page 19 of the Specification as originally filed as follows:

In the embodiment of Figure 10, the measuring units 24, 26, 28 again show a ground plate 40 and two cameras 42, 44 which are directed under different angles to the pertinent wheel 36. On the ground plates 40, 46, 48 of the measuring units 24, 26, 28 reference system measuring heads 50, 52, 54 are provided which allow an optical measurement of the relative angle positions and the distances of the measuring units 24, 26, 28 (and of the measuring unit covered up through the motor vehicle 12). For this purpose ~~porpose~~, each measuring head, for example the measuring head 50, has two transmitter/receiver units 56, 58 which are directed to the measuring head facing longitudinal to the wheel alignment or to the measuring head facing lateral with respect to the motor vehicle. With a reference system of such a kind, a roughly adjusted mounting of the measuring units 24, 26, 28 is sufficient, and the determination of the relative positions and the distances of the

measuring units to each other can continuously be measured and also be re-adjusted.

Please amend the second full paragraph of page 20 of the Specification as originally filed as follows:

Figure 11 shows a schematic sequence flow chart of the measurement, wherein it is assumed that the above mentioned measurements of the reference systems and the calibration of the measuring unit are finished. In step 60 the measurement is started. Along with step 62, the measurements of the individual measuring units 14,16,18 or 24, 26, 28 are executed, wherein the measurement results are entered into a computer (not shown). In ~~in~~ the steps 64, 66 the computer determines in the step 68 the transformation matrix from the results of the reference measurement (BM-results), that is from the results of the reference system measurement. In the step 70, the result vectors of the stereo measurement of the measuring units (MK) are transformed into the arithmetic coordinates system through offset angles and distances from the reference system (RKS –axis) wherein a coordinate system of the measuring unit is arbitrarily fixed as arithmetic coordinate system. In the step 71, the computer then determines the wheel position values in space, that means in particular the individual track angles of the front wheels, the so called geometric driving axis and the like as is customary with usual wheel alignment measuring systems. In doing this, the position of the result vectors to each other is evaluated in the arithmetical coordinates system, and, from that, the corresponding wheel alignment measurement values are calculated. In the step 76, finally, the results for the wheel position values, namely camber, track angle and the angle values derived

from the track angles, are presented to a display arrangement and/or stored for further use.

Please amend the paragraph that begins at line 30 of page 20 and ends at line 13 of page 21 of the Specification as originally filed as follows:

Figure 12 shows a sequence flow chart of the measurements in a measuring unit in somewhat greater detail. In the step 80, a start signal for the measurement is given. Thereupon, in step 82, the picture shooting is started, wherein firstly, in step 84, it is examined whether the illumination for the measure-ment is adequate and, if necessary, the illumination is adjusted. The adjustment can include a larger or smaller intensity of the light for the illumination where, in any case, the objective consists in obtaining as good a contrast as possible of the part of the rim observed by the camera or of the rim horn. In the step 86, the cameras that are arranged right or left in respect of the wheel axis, are active and serve both for examination of the illumination situation as well as for taking the stereo pictures of the wheel rim after completed setting of the illumination. In step 88, a segmentation of the rim is made, wherein, in step 90, a segmentation of the air valve of the motor vehicle wheel is made, that means the angle position of the air valve is determined. The steps 92 to 98 serve the segmentation of the rim edge, wherein, in step 92, a pre-segmentation, in step 94 a fine segmentation, in step 96, a sub-pixel segmentation and in step 98, a determination of the real rim edge contour with respect to the model assumption takes place. This segmentation is undertaken in order to measure out defined angle ranges of the rim edge and to be able to take into account the measured values when determining the ~~the~~ rim edge plane.

Please amend the first full paragraph of page 22 of the Specification as originally filed as follows:

For determination of the king pin angle in the course of ~~an~~ a turning angle measurement and the determination of the changes of the castor at the adjustment of the castor, the wheel rotation is to be deter-mined with an accuracy of at least 2 angle minutes. Nevertheless an arbitrary rotation of the wheel must not be detectable. For this purpose, the determination of the 3D position of the air valve can be executed. Alternatively the measurement and pursuance of non-rotating edges or structures or features in the rim can be executed wherein corresponding algorithms as for the rim edge determination can be used.

Please amend the last full paragraph of page 22 of the Specification as originally filed as follows:

In the following, the calculation ~~basis~~ bases for the calculation of the wheel alignment parameters are de-scribed.

Please amend the lines 13-15 of page 23 of the Specification as originally filed as follows:

RKS	~~Arithemetic~~ Arithmetic Coordinates system	Arbitrary but meaningfully fixed coordinate system for calculating of all MKs to obtain a wheel alignment measurement

Please amend line 29 of page 23 of the Specification as originally filed as follows:

(x",y",z") Vector parallel to the RKS (arithmetic ~~arithemetic~~ coordinates system)

Please amend line 25 of page 24 of the Specification as originally filed as follows:

Displacement ~~Dispalcement~~ of the starting points of the vector in the RKS.

Please amend the last full paragraph of page 25 of the Specification as originally filed as follows:

The above description of the preferred embodiments of the invention ~~have~~ has been given for the purpose of explanation. The invention is not limited to the disclosed embodiments. Many possibilities and alterations of the embodiments are evident to a man skilled in the art with reference to the above disclosure, and the scope of protection of the invention is defined only by the enclosed claims.